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FLOOD INSURANCE STUDY

TOWN OF SOUTH CONGAREE, SOUTH CAROLINA

LEXINGTON COUNTY

COMPLETED

REVISED:

DECEMBER 2, 1988

ORIGINAL

Federal Emergency Management Agency

COMMUNITY NUMBER - 450137

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

This publication incorporates revisions to the original Flood Insurance Study. These revisions are presented in Section 9.0.

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FLOOD INSURANCE STUDY
TOWN OF SOUTH CONGAREE, SOUTH CAROLINA

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Flood Insurance Study is to investigate the existence and severity of flood hazards in the Town of South Congaree, Lexington County, South Carolina and to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of the information will be to convert the Town of South Congaree to the regular program of flood insurance by the Federal Insurance Administration (FIA). Further use of the information will be made by local and regional planners in their efforts to promote sound land use and flood plain development.

1.2 Coordination

Streams requiring detailed study were identified at a meeting attended by representatives of the Corps of Engineers (COE), the FIA, the Town of South Congaree, and the Central Midlands Regional Planning Council in January 1976. Various state, federal, and local agencies were contacted to obtain existing data and previously published flood information. Results of the hydraulic analyses were coordinated with the U.S. Geological Survey (USGS). On September 5, 1978, the results of the study were reviewed at the final meeting attended by representatives of the COE, FIA, and community officials. The study was acceptable to the community.

1.3 Authority and Acknowledgements

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968, as amended.

The hydrologic and hydraulic analyses for this study were performed by the Charleston District of the U. S. Army Corps of Engineers for the Federal Insurance Administration under Interagency Agreement No. (IAA)-H-10-77, Project Order No. 5. This work, which was completed in March 1978 covered all significant flooding sources in the Town of South Congaree.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Town of South Congaree, Lexington County, South Carolina. The area of study is shown on the Vicinity Map (Figure 1).

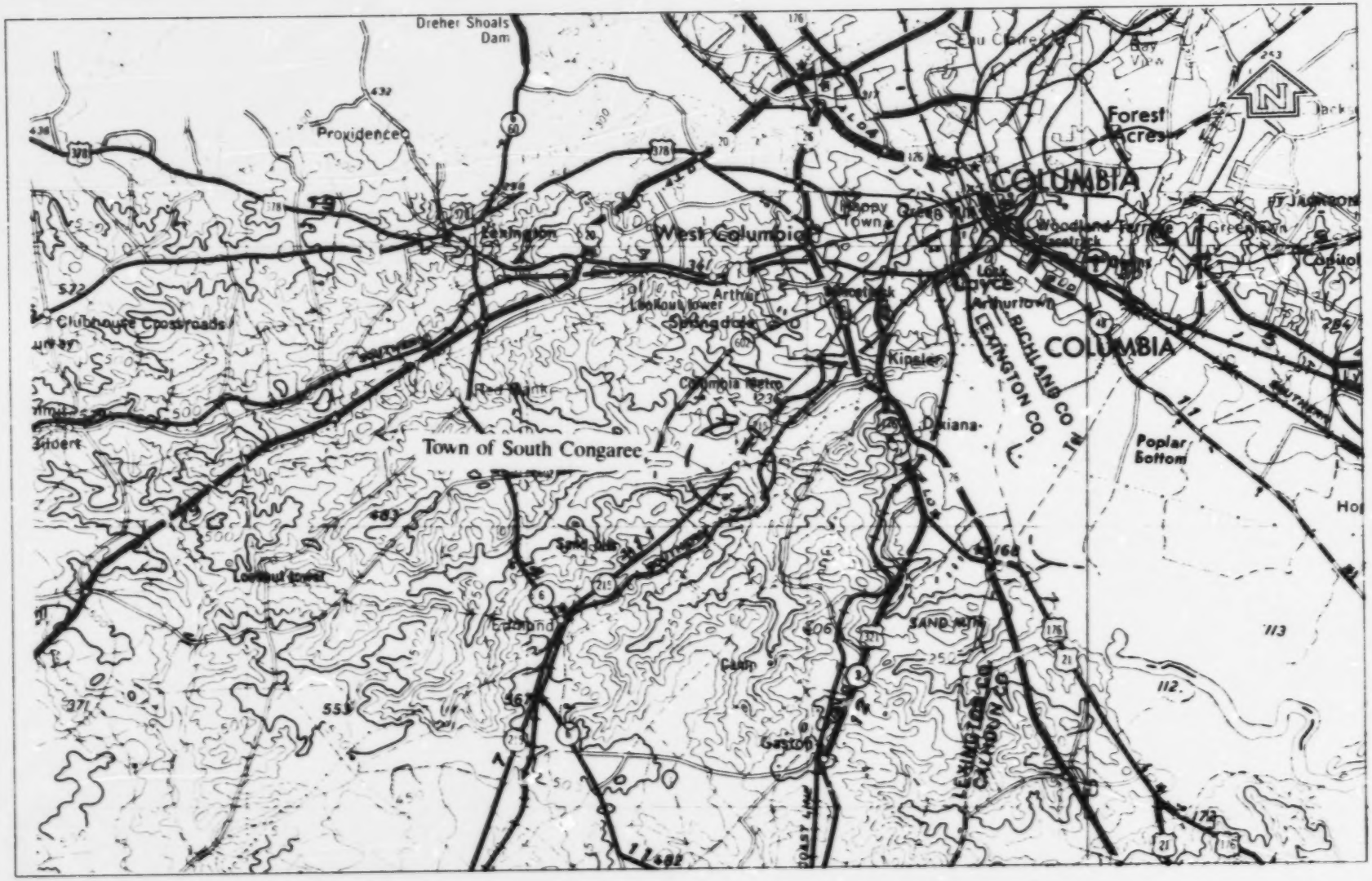

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF SOUTH CONGAREE, SC
(LEXINGTON CO.)

VICINITY MAP

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Flood sources studied included the reaches of Congaree Creek and First Creek that lie within the town limits. The study areas were selected with priority given to known flood hazard areas, and areas of projected development or proposed construction for the next five years, through April 1983.

2.2 Community Description

The Town of South Congaree is located in the central portion of South Carolina in the eastern portion of Lexington County. The total land area contained within the corporate limits is about three square miles. The boundaries of Pine Ridge and South Congaree form two intersecting circles with South Congaree on the west. Both towns are located about six miles southwest of Columbia. According to U. S. Census Bureau figures, the population of South Congaree has increased from 650 in 1960 to 1,434 in 1970 (Reference 1).

Congaree Creek, a tributary of Congaree River, flows from its headwaters about 18 miles in a northeasterly direction through the Towns of South Congaree and Pine Ridge to the City of Cayce. From Cayce the creek turns southward and flows another 1.5 miles to the Congaree River. The drainage area of Congaree Creek above South Congaree is about 87 square miles.

First Creek, a tributary flowing north into Congaree Creek, is about 10 miles in length with a drainage area of 34.4 square miles.

Approximately twenty percent of the town has been developed with the remainder of land being vacant or wooded. Within the flood plain studied, development is limited to a few single family residences and utility buildings. The majority of development is located south of Ramblin Road (S.C. Highway 103).

The climate of central South Carolina is temperate. Average monthly temperatures range from 84 degrees F in the summer to 39 degrees F in the winter. Average annual precipitation for the region is 46.4 inches. The precipitation is fairly evenly distributed throughout the year but approximately forty percent of the annual rainfall can be expected to occur during the period June through September (Reference 2).

2.3 Principal Flood Problems

Major floods in the South Congaree area are most likely to occur from June through September as a result of tropical storms; however, local thunderstorms have produced floods in other seasons. Major floods on Congaree Creek will reach peak stage about 24 hours after beginning of storm rainfall, and will remain above flood stage for approximately 48 hours. Rates of rise and durations of floods on First Creek will be similar to those on Congaree Creek.

Stream gage data has been collected at the Congaree Creek gage below U.S. Highway 321 at Cayce since 1959 (Reference 3). During the period of record, the maximum flood (October 1959) reached a peak discharge of 1,840 cfs and crested at 134.9 feet National Geodetic Vertical Datum of 1929 (NGVD). This flood had an approximate return frequency of 18 years. The estimated 100-year flood at the same location has a peak discharge of 14,800 cfs and a crest stage of 143.5 feet NGVD. The October 1959 flood caused only a small amount of damage in South Congaree since there was little development in the flood plain at the time. Information relating to past floods on First Creek was not available.

2.4 Flood Protection Measures

There are presently no planned or completed flood control projects that affect the Town of South Congaree. The need to control development in flood prone areas has been recognized by town officials and the Central Midlands Regional Planning Council, but no regulatory measures have been adopted to date.

3.0 ENGINEERING METHODS

For flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Floods having recurrence intervals of 10-, 50-, 100-, and 500-years have been selected as having special significance for flood plain management and for flood insurance premium rates. The analyses reported here reflect current conditions in the drainage areas of the streams.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail in the community.

Four methods were employed to develop a discharge-frequency curve for Congaree Creek. Stream gage records collected since 1959 at USGS Station No. 02169550, Congaree Creek at Cayce, South Carolina, were used as basis for probability determination using the log-Pearson Type III method (References 4 and 5). The results of the probability studies established the lower end of the frequency curve (below 10-year frequency). However, due to the relatively short period of record and the absence of major flood occurrences during the period of record, the upper end of the Congaree Creek frequency curve was established based on results of a rainfall-runoff model developed using prescribed COE methodology (Reference 6), methods described in a USGS Administrative Report (Reference 7), and relationships established during a COE regional flood frequency study conducted in 1976 (Reference 8). The 500-year frequency flows were determined from extrapolation of the 10-, 50-, and 100-year flows on log-probability paper.

Discharge-frequency relationships for First Creek were developed using a method presented in a USGS open file report published in 1972 (Reference 9). Results obtained using the empirical equations presented in the report have compared favorably with the results of probability studies and rainfall-runoff model studies on other streams in the same area.

The peak discharge-drainage area relationships for the selected recurrence intervals are presented in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
CONGAREE CREEK					
At USGS Gage below U.S. Highway 321	136.0	1,400	7,000	14,800	21,800
At N.W. Town Limits of South Conga	87.1	1,120	5,600	12,000	18,300
FIRST CREEK					
At mouth	34.4	1,200	6,157	6,870	10,574

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail in South Congaree were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of the flood sources.

Cross sections for the backwater analyses of all detailed study reaches were obtained by field surveys and information obtained from 1"=200', 5-foot contour interval topographic maps (Reference 10). All bridges, dams, and culverts were field checked to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Channel and flood plain roughness factors (Mannings "n"), selected for hydraulic computations, were based on information obtained from aerial photographs and field observations of the streams and flood plain areas. The roughness factor used for the main channel of Congaree Creek was 0.08 and the overbank values ranged from 0.10 to 0.12 for all floods. Channel and overbank roughness factors used for First Creek backwater computations ranged from 0.05 to 0.15. Assumed hydraulic factors, cross sections, and hydraulic structure data was checked by computations that compared favorably with available historic flood data.

Water-surface elevations of floods of the selected recurrence intervals were computed through use of the COE HEC-2 step-backwater computer program (Reference 11). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations for Congaree Creek were obtained from Congaree River flood profiles developed for the West Columbia Flood Insurance Study (Reference 12). Starting water-surface elevations for First Creek were obtained from the Congaree Creek profile. All elevations are referenced from the National Geodetic Vertical Datum of 1929 (NGVD), formerly referred to as Sea Level Datum of 1929. Elevation reference marks used in this study are shown and described on the maps.

The hydraulic analyses for this study were based on conditions that existed at the time field surveys were conducted. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

A prime purpose of the National Flood Insurance Program is to encourage state and local governments to adopt sound flood plain management programs. Each Flood Insurance Study, therefore, includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the FIA as the base flood for purposes of flood plain management measures. The 500-year flood is used to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100-year and the 500-year floods have been delineated using the flood elevations at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1"=200" with a contour interval of five feet (Reference 10). In cases where the 100-year and the 500-year boundaries are close together, only the 100-year boundary has been shown.

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map. Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to limitations of the map scale, and/or lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of the FIA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodway presented in this study was computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway widths were determined at cross sections; between cross sections, widths were interpolated and boundaries drawn. In cases where the floodway and the 100-year boundaries are close together, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
CONGAREE CREEK								
A	62,250	443[2]	1025	2.2	147.1	147.1	148.1	1.0
B	68,000	178	859	2.3	155.3	155.3	155.9	0.6
C	69,100	90	530	3.7	155.8	155.8	156.6	0.8
D	73,500	468	1891	1.0	158.8	158.8	159.7	0.9
E	78,100	441	1374	1.4	163.0	163.0	163.9	0.9
FIRST CREEK								
A	2950	660	4096	1.7	158.8	158.8	159.7	0.9
B	3450	660	6274	1.1	164.3	164.3	165.3	1.0
C	3625	920	7217	1.0	164.4	164.4	165.4	1.0
D	3900	870	1784	3.9	165.0	165.0	166.0	1.0
E	6550	480	3470	2.0	168.1	168.1	169.1	1.0
F	8350	355[2]	2854	2.4	173.0	173.0	173.9	0.9

[1]FEET ABOVE MOUTH
[2]THIS WIDTH IS BEYOND CORPORATE LIMITS

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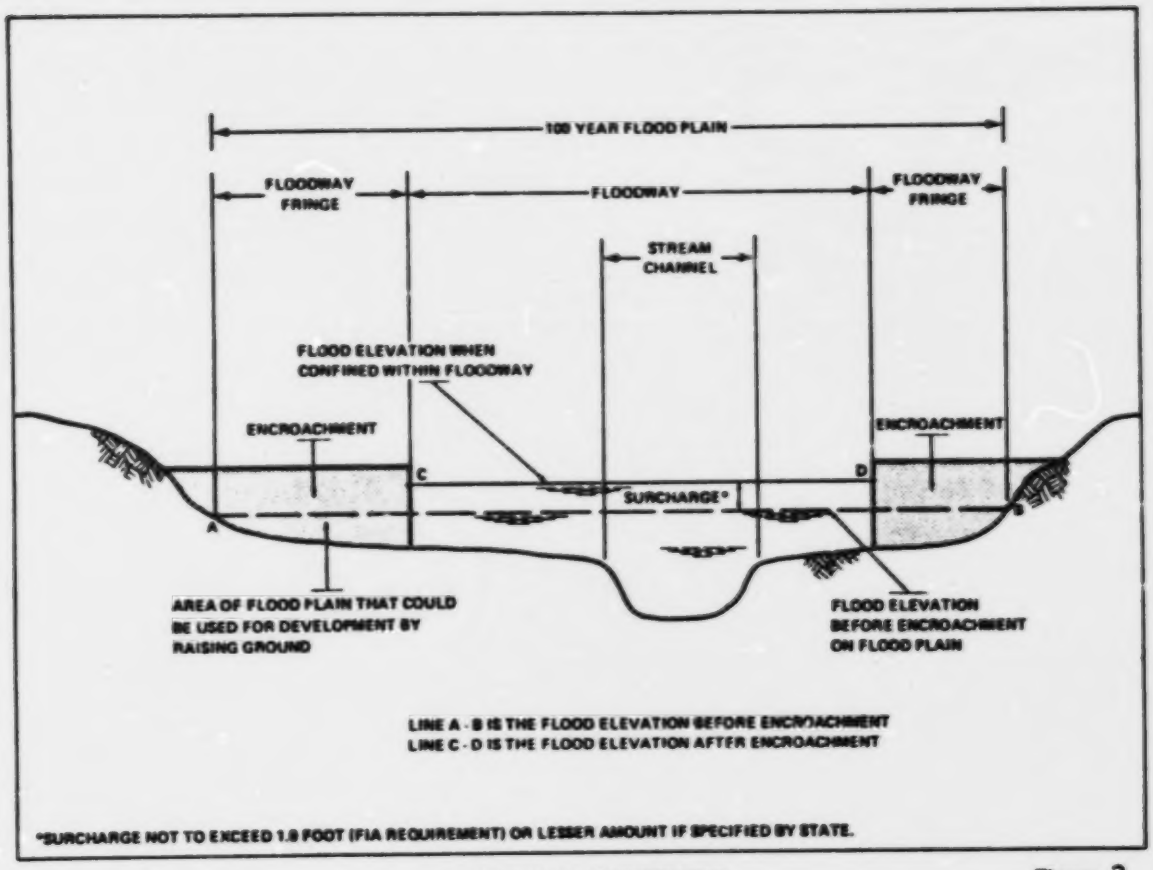
TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF SOUTH CONGAREE, SC
(LEXINGTON CO.)

FLOODWAY DATA

CONGAREE CREEK—FIRST CREEK


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FIA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FLOODWAY SCHEMATIC

Figure 2

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the FIA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHFs), and flood insurance zone designations for each flooding source studied in detail affecting the Town of South Congaree.

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5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

Average Difference Between 10- and 100-Year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot

Three reaches meeting the above criteria were required for the flooding sources of South Congaree. These include one reach on Congaree Creek and two reaches on First Creek. The locations of the reaches are shown on the Flood Profiles (Exhibit 1).

5.2 Flood Hazard Factors

The FHF is the FIA device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire incorporated area of South Congaree was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations.

Zones A6, A10: Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to FHFs.

Zone B:	Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

Table 3, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevation for each flooding source studied in detail in the community.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the Town of South Congaree is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the FIA.

6.0 OTHER STUDIES

A Flood Plain Information (FPI) Report (Reference 13), which included Congaree Creek and Six Mile Creek, was prepared by the COE in 1969. Some of the information generated during the FPI study was used in this flood insurance study. The rainfall runoff model, developed during the 1969 study to establish 100-year frequency and standard project flood discharge for Congaree Creek, was updated using additional hydrological information and improved computational methods. The results indicated that the value for Snyder Coefficient, selected for the original model, was too high, which caused the computed 100-year peak discharge for Congaree Creek to be too high. A lower coefficient was selected based on information from studies on similar streams in the same region. The discharges obtained using the new coefficient compared favorably with the results of two regional computational methods and probability studies using gage records. Discharge-frequency and elevation-frequency information on Congaree Creek, presented in this flood insurance report, is considered to be more accurate than previously published flood information on Congaree Creek.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Congaree Creek, Reach 1	0001	-4.9	-1.9	+1.6	050	A10	Varies
First Creek							
Reach 1	0001	-2.9	-0.2	+0.9	030	A6	Varies
Reach 2	0001	-5.2	-0.2	+1.8	050	A10	Varies

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT – SEE MAP

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TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF SOUTH CONGAREE, SC
(LEXINGTON CO.)

FLOOD INSURANCE ZONE DATA

CONGAREE CREEK- FIRST CREEK

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the office of the Federal Insurance Administration, Regional Director, 1371 Peachtree Street N.E., Atlanta, Georgia 30309.

8.0 BIBLIOGRAPHY AND REFERENCES

1. U. S. Department of Commerce, Bureau of Census, 1970 Census of Population, Number of Inhabitants, South Carolina, Washington, D.C., 1971.

2. U. S. Department of Commerce, NOAA Environmental Data Service, Monthly Averages of Temperature and Precipitation for State Climatic Divisions 1941-1970 South Carolina, National Climatic Center, Asheville, N. C., 1973.

3. U. S. Geological Survey Water-Data Report S. C. -75-1, Water Resources Data for South Carolina, Water Year 1975, USGS Water Resources Division, Columbia, S.C.

4. Corps of Engineers, Sacramento, California District, Statistical Methods in Hydrology by Leo R. Beard, January 1962.

5. U. S. Water Resources Council, Washington, D. C., Guidelines for Determining Flood Flow Frequency, Bulletin #17, March 1976.

6. U. S. Army Corps of Engineers, Flood Hydrograph Analyses and Computations, EM 1110-2-1405, August 1959.

7. U. S. Geological Survey, Columbia, S. C., Estimating the Magnitude of Peak Discharges for Selected Flood Frequencies on Small Streams in South Carolina, Benjamin H. Whetstone, September 1975.

8. U. S. Army Corps of Engineers, Charleston District, Charleston District Regional Frequency Analysis, unpublished data developed during 1976.

9. U. S. Geological Survey, Raleigh, N.C., Effect of Urban Development on Floods in the Piedmont Province of North Carolina, Arthur L. Putnam 1972.

10. Central Midlands Regional Planning Council, Topographic Maps, Contour Interval 5 feet, Scale 1-inch equals 200 feet, date of photography February 1973.

11. U. S. Army Corps of Engineers, HEC-2 Water Surface Profiles Users Manual, October 1973.

12. U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of West Columbia, Lexington County, South Carolina, draft report prepared by the Corps of Engineers in February 1978.

13. U. S. Army Corps of Engineers, Charleston District, Flood Plain Information, Lexington County, South Carolina, Congaree Creek and Six Mile Creek, January 1969.

9.0 REVISIONS DESCRIPTION

This section has been added to provide information regarding significant revisions made since the original Flood Insurance Study was printed. Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood hazard data located at the Town Hall Office, 1633 Berry Road, South Congaree, South Carolina.

9.1 First Revision (Revised December 12, 1988)

a. Acknowledgments

The hydrologic analyses for this Revisions Description were performed by Mr. Steven M. Bradley, P.E. The Federal Emergency Management Agency reviewed and accepted these data for purposes of this revision.

b. Scope

Congaree Creek was restudied from approximately 4.7 miles upstream of its mouth at the Congaree River to approximately 14.8 miles upstream of its mouth at the Congaree River. The entire portion of Congaree Creek within the Town of South Congaree was affected by the revision. The water-surface elevation profiles for First Creek were adjusted to match the revised backwater elevations of Congaree Creek.

c. Hydrologic and Hydraulic Analyses

The discharges for Congaree Creek were reduced based on a U.S. Geological Survey (USGS) report titled "Techniques for Estimating Magnitude and Frequency of Floods in South Carolina" (Reference 14). The new discharges are shown in Table 4, Revised Summary of Discharges. The revised base flood elevations and water-surface profiles were derived from the existing hydraulic model using the reduced discharges. The floodplain along Congaree Creek was delineated using USGS topographic maps at a scale of 1:24000 with a contour interval of 10 feet (Reference 15).

TABLE 4 - REVISED SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
CONGAREE CREEK					
approximately 4.7 miles above mouth	138	1,570	2,080	2,370	2,640
approximately 12.6 miles above mouth	98	1,260	1,720	1,980	2,200

d. Insurance Application

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

The reach determinations, flood hazard factors, and flood insurance zones presented in Sections 5.1, 5.2, and 5.3 of this report and Table 3, Flood Insurance Zone Data, are no longer applicable.

e. Flood Insurance Rate Map

The flood Insurance Rate Map is designed for flood insurance and floodplain management application.

f. Floodways

Floodway computations for Congaree Creek were revised as a result of the revised 100-year discharges. The floodways were computed on the basis of equal conveyance reduction from each side of the floodplain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was revised and are presented in Table 2, Floodway Data.

g. Other Studies

The Flood Insurance Studies for Lexington County, South Carolina (Reference 16) and the Town of Pine Ridge, South Carolina (Reference 17) are being revised in conjunction with this study and are in agreement with this revised study.

h. References and Bibliography

14. U.S. Geological Survey, Water Resources Investigations Report 82-1, Techniques for Estimating Magnitude and Frequency of Floods in South Carolina, Columbia, South Carolina, February 1982.

15. U.S. Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:24000, Contour Interval 10 Feet: Lexington, South Carolina, photorevised 1982; Southwest Columbia, South Carolina, photorevised 1982.

16. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Lexington County, Unincorporated Areas, South Carolina, June 1981, revision in progress.

17. ————, Federal Insurance Administration, Flood Insurance Study, Town of Pine Ridge, Lexington County, South Carolina, March 1980, revision in progress.

ELEVATION REFERENCE MARKS

REFERENCE MARK	FLOOD INSURANCE RATE MAP PANEL	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
1	0001	163.36	chiseled "X" cut in top of curb in southern side of bridge on Ramblin Road over First Creek, 15 feet from east end of bridge
2	0001	158.26	chiseled "X" cut in top of curb at southwestern end of bridge on S.C. Highway 168 over Congaree Creek
3	0001	184.79	railroad spike driven into power pole, about 1 foot above ground, at northern corner of intersection of Daniel Road and Ramblin Road

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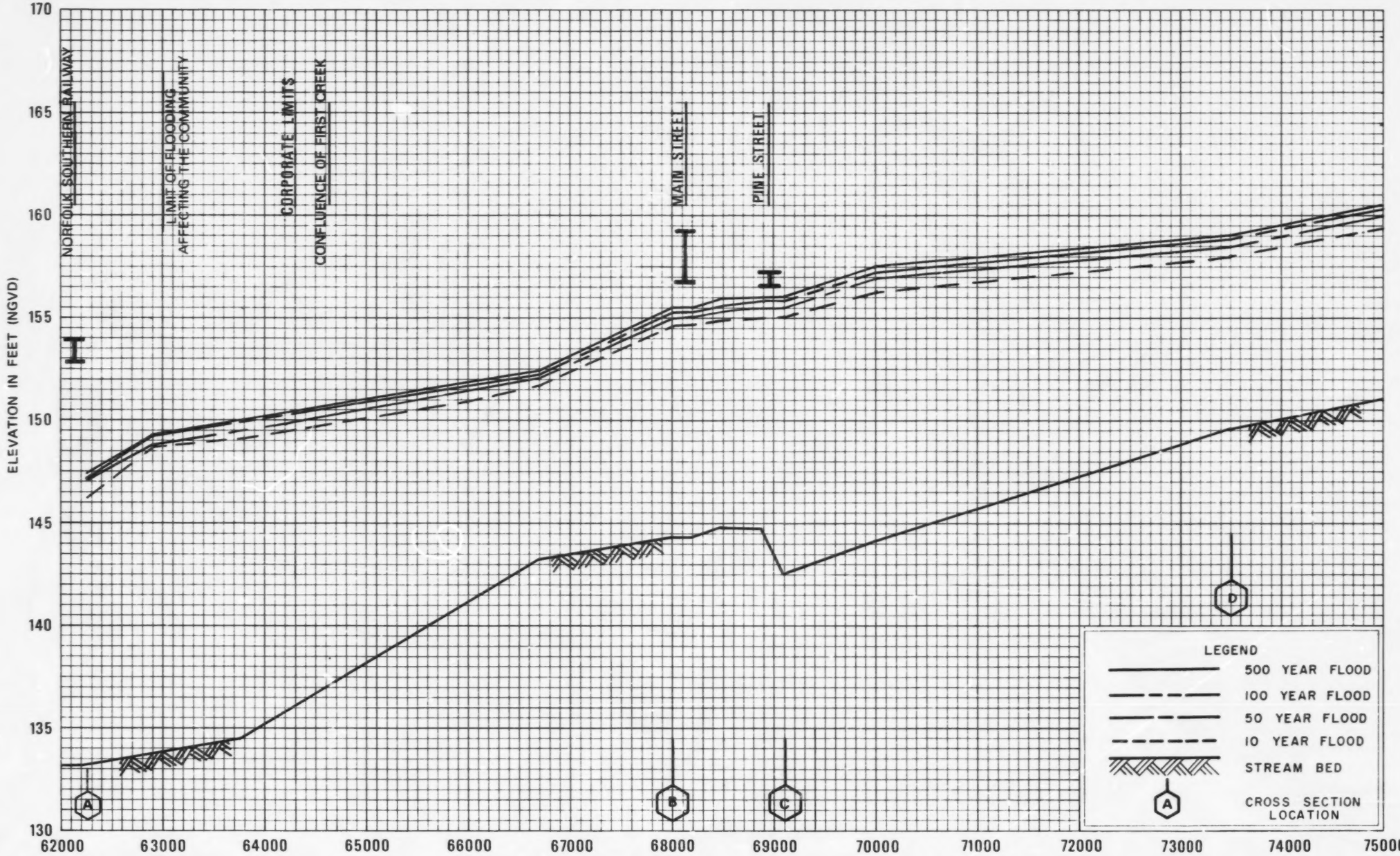

FLOOD PROFILES

CONGAREE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF SOUTH CONGAREE, SC
(LEXINGTON CO.)

01P

REVISED 12/2/88

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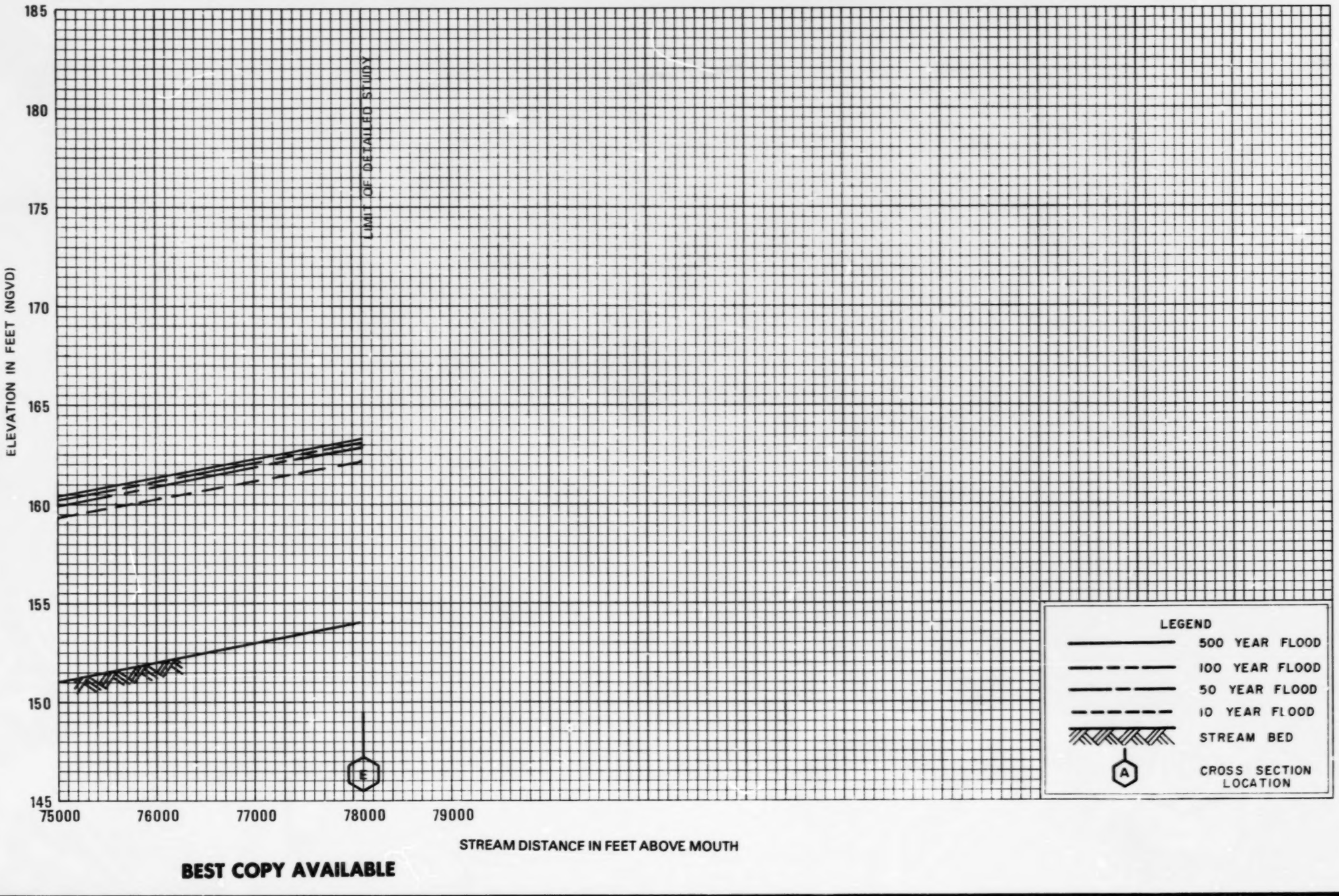

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FLOOD PROFILES

CONGAREE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF SOUTH CONGAREE, SC
(LEXINGTON CO.)

02P

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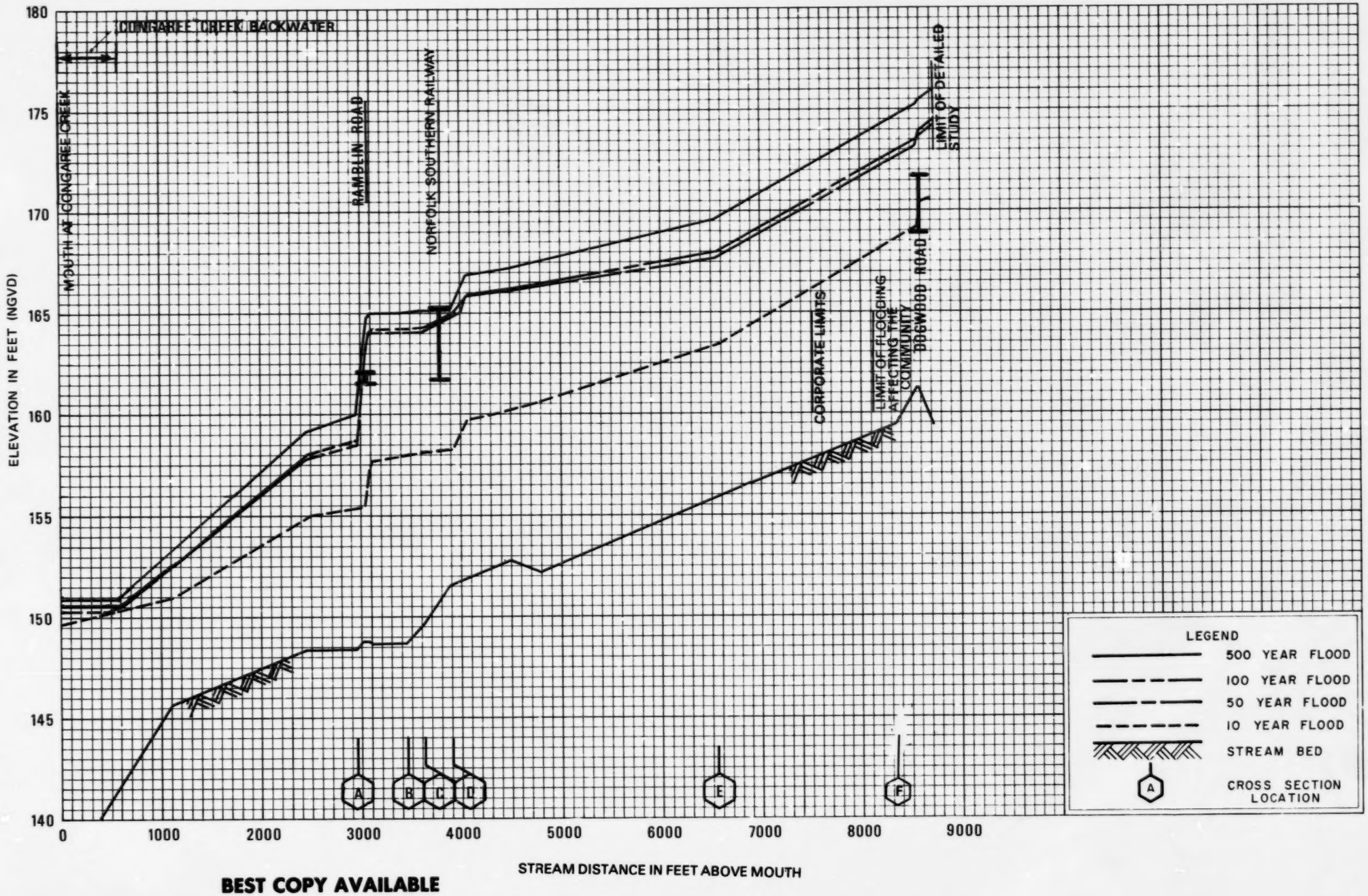

FLOOD PROFILES

FIRST CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF SOUTH CONGAREE, SC
(LEXINGTON CO.)

03P

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